



1

SEQUENCE LISTING

<110> WADA, MITSUFUMI  
OIKAWA, TOSHIHIRO  
MOCHIZUKI, DAISUKE  
TOKUDA, JUNKO  
KAWASHIMA, MIYUKI  
ARAKI, TADASHI  
ABE, REIKO  
MIYAKE, HITOKI  
TAKAHASHI, HITOSHI  
SAWAI, HIDEKI  
MIMIZUKA, TAKASHI  
MORISHIGE, TAKASHI  
HIGASHI, YOSUKE

<120> BIOCATALYST FOR PRODUCTION OF D-LACTIC ACID

<130> 1034232-000019

<140> 10/573,813  
<141> 2006-07-27

<150> PCT/JP04/014037  
<151> 2004-09-17

<150> JP 2003/342222  
<151> 2003-09-30

<150> JP 2003/342165  
<151> 2003-09-30

<150> JP 2003/340062  
<151> 2003-09-30

<150> JP 2004/150252  
<151> 2004-05-20

<150> JP 2004/150253  
<151> 2004-05-20

<160> 36

<170> PatentIn Ver. 3.3

<210> 1  
<211> 34  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 1  
ggaattcgtc gaccggctcc agttcgaagc tggt

<210> 2  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 2  
ggaattctga ctcagctaac aataaaattt tt 32

<210> 3  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 3  
ggaattccgg agaaagtctt atgaaact 28

<210> 4  
<211> 29  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 4  
cccaagcttt taaaccagtt cgttcgggc 29

<210> 5  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 5  
gcacgaaagc tttgattacg 20

<210> 6  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
       primer  
  
 <400> 6  
 ttattgcatg cttagatttg actgaaatcg 30

<210> 7  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
       primer  
  
 <400> 7  
 ttattgcatg cttatttact gcgtacttcg 30

<210> 8  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
       primer  
  
 <400> 8  
 aaggcctacg aaaagctgca g 21

<210> 9  
 <211> 18  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
       primer  
  
 <400> 9  
 caacaccaag ctttcgcg 18

<210> 10  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
       primer  
  
 <400> 10  
 ttccactcct tgtggtggc 19

<210> 11  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 11  
 aactgcagaa attacggatg gcagag

26

<210> 12  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 12  
 tgttctagaa agttctttga c

21

<210> 13  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 13  
 aacgaattct cgcaatgatt gacacgattc

30

<210> 14  
 <211> 32  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 14  
 acagaattcg ctatttggtta gtgaataaaa gg

32

<210> 15  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic primer

<400> 15  
ggaattccgg agaaagtctt atgaaact 28

<210> 16  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic primer

<400> 16  
cccaagcttt taaaccagtt cgttcggggc 30

<210> 17  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic primer

<400> 17  
aaggtaccac cagagcgttc tcaagc 26

<210> 18  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic primer

<400> 18  
gctctagatt ctccagtgat gttgaatcac 30

<210> 19  
<211> 28  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic primer

<400> 19  
 ggtctagagc aatgattcac acgattcg 28

<210> 20  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 20  
 aactgcaggt tcgttctcat acacgtcc 28

<210> 21  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 21  
 aaaggtacca gaataccttc tgctttgccc 30

<210> 22  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 22  
 aaaggatccc ctaaactcct tattatattg 30

<210> 23  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 23  
 aaaggatcca aaccggagca cagactccgg 30

<210> 24  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 24  
 aaatctagaa tcagatcatc gtcgccttac 30

<210> 25  
 <211> 19  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 25  
 acggagcatg acggcaagc 19

<210> 26  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 26  
 aatctagaca ccccatctta tcgtttg 27

<210> 27  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 27  
 tttctagatc ttctctttct gcaaacc 28

<210> 28  
 <211> 28  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
       primer  
  
 <400> 28  
 ctttgagctc acgcgaggcc aggttatc 28  
  
 <210> 29  
 <211> 27  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic  
       primer  
  
 <400> 29  
 agtgaattct cacagccagt gcgccga 27  
  
 <210> 30  
 <211> 29  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic  
       primer  
  
 <400> 30  
 agtggatccc gcatcgccaa tgtaaattcc 29  
  
 <210> 31  
 <211> 31  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic  
       primer  
  
 <400> 31  
 agtggatccg acattcctcc agattgtttt t 31  
  
 <210> 32  
 <211> 22  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Synthetic  
       primer  
  
 <400> 32  
 ataacgcaag aaagcttggt ga 22



<210> 33  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 33  
 ttttgagctc gatcaggatt gcggttggtgg 30

<210> 34  
 <211> 20  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 34  
 cgaacagtaa tcgtacaggg 20

<210> 35  
 <211> 35  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 35  
 tacgattact gttcggcatc gaccgaatac ccgag 35

<210> 36  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 primer

<400> 36  
 tttttctaga cctggcacgc ctctcttctc 30